

Montana State Legislature

2011 Session

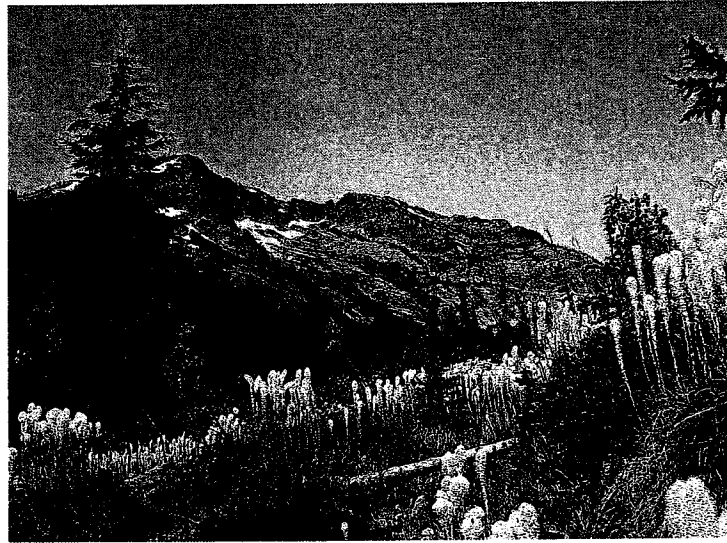
Exhibit 8

This exhibit is a booklet which can not be scanned, therefore only the front cover/table of content and 10 pages have been scanned to aid in your research.

The original exhibits are on file at the Montana Historical Society and may be viewed there.

**Montana Historical
Society Archives
225 N. Roberts
Helena MT 59620-1201
2011 Legislative Scanner Susie Hamilton**

Montana Forest and Conservation Experiment Station



2009/2010



The University of
Montana



**COLLEGE OF
FORESTRY AND
CONSERVATION**
Where Ideas Take Flight

Director's Message

The Montana Forest and Conservation Experiment Station (MFCES) continues its proud history of serving the people of Montana through innovative research and outreach to support Montana's economy and protect our natural legacy. The forests of Montana faced considerable challenges over recent years with contracting markets for wood products and an historic infestation of mountain pine beetles. Yet there remains no more powerful antidote to these challenges than the contribution of science to recognize new ways to manage forests to adapt to these changing conditions and put Montanans back to work in solving our problems. Throughout the past two years the MFCES has stood at the forefront of advancing ideas for utilizing forest resources through research into biomass potential and efficient treatments of multiple forest types. Faculty researchers of MFCES and the College of Forestry and Conservation have revealed new knowledge of the dynamics of mountain pine beetle attacks and the most effective means to mitigate impacts and speed the recovery of affected forests. Further, MFCES faculty are pioneering methods to monitor and evaluate forest changes to be able to design future forest treatments that provide jobs in the forest as well as improve wildlife habitat and recreation opportunities.



This report highlights a few of the major programs that flourished within the MFCES in the last biennium while providing a window to the wealth of potential future benefits from forestry research. The faculty scientists of MFCES are housed at the University of Montana's College of Forestry and Conservation and they are introduced on the following pages. The new projects that have been generated through the energy and commitment of these scientists are impressive, and a brief description of the major awards throughout the biennium is provided. Finally, the report closes with a more detailed description of four selected research and outreach endeavors: (1) Biomass research to create new marketing opportunities for wood products; (2) MFCES's Applied Forest Management Program and its response to the mountain pine beetle outbreak; (3) Monitoring forest conditions and the impacts of forest treatments to design more effective forest management operations; and (4) Workforce development programs in wildland fire management to apply the latest science tools to create more skilled fire fighters and reduce the cost of wildfire suppression.



It's important to note that the support provided by the State of Montana to the MFCES establishes the foundation for this broad array of research and outreach projects, such that each dollar invested by the state leverages another five dollars in sponsored research projects acquired through external grants and contracts. This investment in science and the capacity of the MFCES to attract additional resources creates both immediate and long-term economic impacts. Not only are there jobs created to conduct the research, but investments in the MFCES and its research mission provide vital training to the next generation of innovators and entrepreneurs who start businesses in Montana.

We cherish our forests in Montana, and the Montana Forest and Conservation Experiment Station will remain a reliable, trusted partner in creating the knowledge and opportunity to better use them.

Faculty Scientists

2009/2010



David L. Affleck
Assistant Professor, Forest Biometrics;
MFCES Statistician

Donald J. Bedunah
Professor, Range Resources Management

Jill M. Belsky
Professor, Natural Resource Sociology;
Director, Bolle Center for People and
Forests

William T. Borrie
Professor, Wildland Recreation
Management

Keith Bosak
Assistant Professor, Recreation and
Tourism

Perry J. Brown
Professor, Forest Resources

James A. Burchfield
Interim Dean, College of Forestry and
Conservation; Associate Professor,
Forest Social Science; Interim Director,
Montana Forest and Conservation
Experiment Station

Edwin J. Burke
Professor, Wood Science and Technology

Woodam Chung
Associate Professor, Forest Operations

Cory Cleveland
Assistant Professor, Soil Science

Elizabeth Covelli
Assistant Professor, Parks Tourism &
Recreation Management

Solomon Dobrowski
Assistant Professor, Forest Landscape
Ecology

Elizabeth M. Dodson
Assistant Professor, Integrated Natural
Resource Planning

Lisa A. Eby
Associate Professor, Aquatic Vertebrate
Ecology

Wayne A. Freimund
Arkwright Professor of Protected Area
Management

John M. Goodburn
Associate Professor, Silviculture;
Director, Inland Northwest Growth and
Yield Cooperative

Richard B. Harris
Adjunct Research Associate Professor,
Wildlife Management

Mark Hebblewhite
Assistant Professor, Wildlife Biology

Christopher Keyes
Research Associate Professor, Forest
Management; Director of the Applied
Forest Management Program

John Kimball
Adjunct Research Associate Professor,
Flathead Lake Biological Station

Peter F. Kolb
Adjunct Research Associate Professor,
Forest Ecology; MSU Extension Forester

Paul R. Krausman
Boone and Crockett Professor of Wildlife
Conservation

Stephen F. McCool
Professor Emeritus, Wildland Recreation
Management

L. Scott Mills
Professor, Wildlife Population Ecology

Michael Mitchell
Adjunct Research Professor; Leader,
Montana Cooperative Wildlife Research
Unit

R. Neil Moisey
Professor, Nature Based Tourism

David E. Naugle
Associate Professor, Large Scale Wildlife
Ecology

Cara R. Nelson
Assistant Professor, Restoration Ecology

Norma P. Nickerson
Research Professor; Director, Institute for
Tourism and Recreation Research

Martin Nie
Professor, Environmental Policy



Faculty Scientists 2009/2010

Michael E. Patterson

Professor, Wildlife/Recreation Management; Chair, Department of Society and Conservation

Daniel H. Pletscher

Professor, Wildlife Biology; Director, Wildlife Biology Program

Donald F. Potts

Professor, Watershed Management; Director, Montana Climate Office; Chair, Department of Forest Management

Lloyd P. Queen

Professor, Remote Sensing; Director, National Center for Landscape Fire Analysis

James Riddering

Adjunct Research Assistant Professor, Remote Sensing; National Center for Landscape Fire Analysis

Steven W. Running

Regent's Professor, Ecology; Director, Numerical Terradynamic Simulation Group

Anna Sala

Adjunct Research Associate Professor, Biology

Michael K. Schwartz

Adjunct Research Assistant Professor, Wildlife Biology

Carl A. Seielstad

Research Assistant Professor, Wildfire and Remote Sensing

Christopher W. Servheen

Adjunct Research Associate Professor, Wildlife Conservation; Grizzly Bear Recovery Coordinator

Stephen F. Siebert

Professor, Tropical Forestry; Coordinator, International Conservation and Development Program

Diana L. Six

Professor, Integrated Forest Entomology/Pathology

Jack Ward Thomas

Boone and Crockett Professor Emeritus, Wildlife Conservation

Kathy A. Tonnessen

Adjunct Research Assistant Professor; NPS Liaison to RM-Cooperative Ecosystem Studies Unit

Tyron J. Venn

Assistant Professor, Natural Resource Economics

Ronald H. Wakimoto

Professor, Forest Fire Science; Chair, Department of Ecosystem and Conservation Sciences

Scott W. Woods

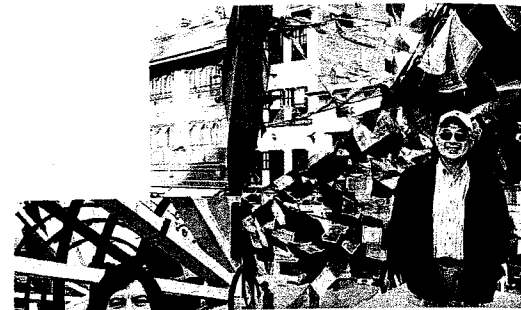
Associate Professor, Watershed Science

Laurie Yung

Research Assistant Professor; Director, Wilderness Institute

Hans R. Zuuring

Professor Emeritus, Forest Biometry



Graduate Students Receiving Degrees 2009 and 2010

Abrahamson, Ilana - MS FOR
Assessing the Performance of Sampling Designs for Measuring Abundance of Understory Plants After Forest Restoration

Adams, John - PhD FOR
Recreation Allocations on National Forests: The Claims and Frames of Recreationists

Adar, Kalil - MS FOR
A Year of Academic Study and Field Experience in the USA: Ideas, Recommendations and Applications to Israeli Forest Ecosystems

Balfour, Victoria - PhD FOR
The Effect of Forest Fires on Runoff Rates: The Role of Duff Removal and Surface Sealing by Vegetative Ash, Western Montana

Benson, Aubree - MS WBIO
Effects of Barriers on Migratory Bull Trout and Application of a Conceptual Framework to Evaluate Tradeoffs Associated with Dam Removal in the Clearwater River Drainage, Montana

Biancucci, Atilio - MS WBIO
Does Nest Size Constrain Clutch Size?: A Tropical-Temperate Test

Boley, Bertram Bynum - MS RECM
Geotourism in the Crown of the Continent: Developing and Testing the Geotourism Survey Instrument

Boyle, Dylan - MS RECM
Evaluating and Comparing Montana's Geotravelers

Carey, Heath - MS RSCN
The Missoula Poplar Project: Utilizing Poplars to Enhance Wastewater Treatment

Cleveland, Shawn - MS WBIO
Human Predation Risk and Elk Behavior in Heterogeneous Landscapes

Corrow, Allissa - MS RSCN
Double Sampling for Coarse Woody Debris Estimations Following Line Intercept Sampling

Crider, Kimberly - PhD FWB
Biological Control: Effects of Tyria jacobaeae on the Population Dynamics of Senecio jacobaeae in Northwest Montana



Derbridge, Jonathan - MS WBIO
Summer Wolf Diet in Northwestern Montana

Efta, James - MS RSCN
A Methodology for Planning Road Best Management Practices Combining Wepp: Road Erosion Modeling and Simulated Annealing Optimization

Eidson, Lisa - MS FOR
Barriers to e-Learning Job Training: Government Employee Experiences in an Online Wilderness Management Course

Essen, Maureen - MS FOR
Ruffled Feathers: Shared Narratives in the Sage-grouse Management Conflict in Sublette County, Wyoming

Fischer, Andrew - MS RSCN
Recommendations for Instream Flow Rights on National Forest Lands in Montana

Floch, Luke - MS FOR
Assessing the Accuracy of LIDAR as a Forest Inventory Tool Using Individual Stem Identification and Attribution

Gardipee, Florence - PhD FWB
Development of Fecal DNA Sampling Methods to Assess Genetic Population Structure of Greater Yellowstone Bison

Garlough, Emily - MS FOR
Factors that Influence Ponderosa Pine Duff Mound Consumption

Grant, Ashley - MS FOR
Restoration of Native Plant Communities After Road Decommissioning: Effect of Seed Mix and Soil Properties on Vegetative Establishment

Greene, Lacey - MS WBIO
Short-Term Effects of Wildfire on Sierra Nevada Bighorn Sheep Habitat Ecology

Hadlow, Ann - MS FOR
Changes in Fire Season Precipitation in Idaho and Montana from 1982-2006

Hakanson, Erik - PhD FOR
Fuels Management Policy and Practice In the U.S. Forest Service

Johnson, Heather - PhD FWB
Escaping the Extinction Vortex: Identifying Factors Affecting Population Performance and Recovery in Endangered Sierra Nevada Bighorn Sheep

Kash, Aaron - MS FOR
The Use of Roll-Off Bins and a Hook-Lift Equipped Harwarder and Truck for Forest Biomass Utilization

Lehman, Ashley - MS RSCN
Assessing Ethnobotanical Knowledge and Resources to Develop a Sustainable Management Plan for the Lokaro Reserve in Southeast, Madagascar